

Chapter 1: The Human Animal

Primates Exploring Primates

Process and Procedures

Part A: Get a Grip!

Pages 36-43

Date

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1. Observations of humans moving:

2. Observations of how humans hold and use objects:

4. Observations of primates moving:

Observations of Primates Moving				
Primate	Arms	Hands	Legs	Feet
Gibbon				
Orangutan				
Gorilla				
Common chimp				
Pygmy chimp				
Human				

7a. How is human movement and posture different from other primates?

7b. In what ways do primates use their thumbs?

7c. In what ways does human thumb use differ from other primates?

9a. What is the importance of an opposable thumb for the ways in which humans use their hands?

9b. How does using an opposable thumb affect the time it takes to use a key to open a lock?

10. Write down your testable questions.

11. Choose the question you want to test.

12. Predict and explain the answer to your question.

14. Record your observations and data.

15. Record the answer to the question that you tested.

16. Explain the connection between the results and your answer.

17. Record limits, exceptions or alternative interpretations of your results.

19. Write a statement about the aspects of inquiry you engaged in during this activity.

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Need to Know

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Use testable
question words

- when
- where
- what
- how many
- how much
- how often

Why is not a good question word

Example: How many fingers does
a gorilla have on its right hand?
(easy to answer)

Why does a gorilla have four
fingers on its right hand?
(not easy to answer)

Specific question
and items

the specific issue being tested
should be in your question and
specific items involved should be
listed or described

Example: How much do gorillas
eat? (not easily tested)

How many pounds of bananas do
adult male gorillas eat? (more
easily tested)

Conditions	<p>specify the conditions under which the test will be conducted</p> <p>Example: How many pounds of bananas do the three adult male gorillas in the National Zoo eat in one week?</p>
Criteria	<p>describe the criteria that will be used to judge the results of the test</p> <p>Example: Does a half-eaten banana count as having been eaten?</p>
Resources and procedures	<p>the necessary materials must be available and doable in the classroom</p>

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Do You Have a Grip on That?

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Power grip

grasp an object with your palm
and then curve your fingers
around it

It requires the full grip of the hand

Examples: holding a hammer or
opening a jar

Precision grip

requires a specific alignment of
the thumb with one or more
fingers

The thumb applies pressure
against another finger(s) to
accomplish a precise motion

Examples: picking up a coin, or
placing a key in a lock and turning
it

Other types of grips

- cylindric grasp
- fist grasp
- hook grasp
- spheric grasp
- tip prehension
- palmar prehension
- lateral prehension

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Process and Procedures

Part B: All Brains on Board

Pages 43-47

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1. Draw a top view and a side view of the sheep brain.
2. Label the cerebrum and cerebellum on your drawings.
3. Compare the cerebrum and cerebellum of the sheep to those of other animals.

Organism	Brain Length (cm)	Brain Weight (g)
Rat		
Camel		
Kangaroo		
Frog		
Raccoon		
Monkey		
Baboon		
Squirrel		
Dolphin		
Rabbit		
Cat		
Human		

5a. Which brain is most like the sheep brain?

5b. What is your evidence?

5c. Why do you think some brains are similar?

5d. What about the human cerebrum makes it distinctive from others?

5e. How are the functions of the human cerebrum distinctive?

5f. Which animals would you expect to have well-developed cerebellums? Explain.

5g. What inferences might you make about an animal that has a brain with very large optic lobes or olfactory bulbs?

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Mapping the Brain

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Cerebrum

the front area of the brain

It is responsible for:

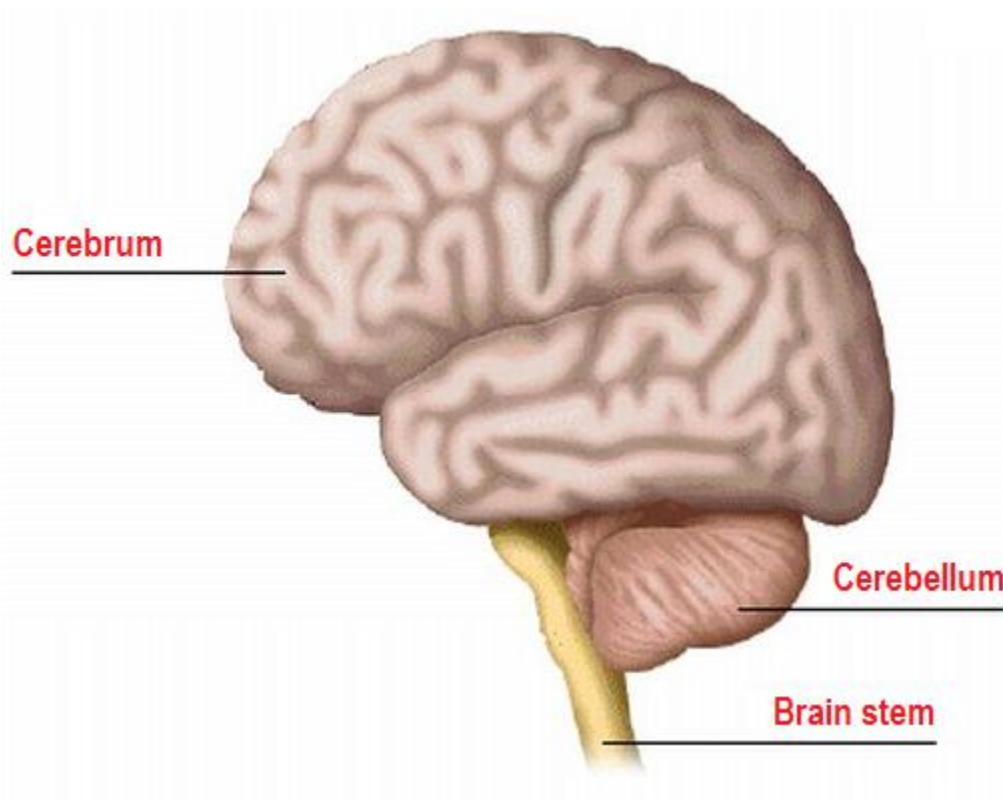
- social behavior
- complex reasoning
- language
- voluntary movement
- initial processing of sensations

Cerebellum

area at the back of the brain that controls posture and balance

Brain stem

directs critical activities that support life (breathing, heartbeat)



Cerebrum

when overloaded with activity,
teenagers have a difficult time making
good decisions quickly

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Analysis

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1. Explain how different behaviors in different animals might be related to differences in their brains.

2. List two additional questions you now have about the brain.

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Brains and More Brains

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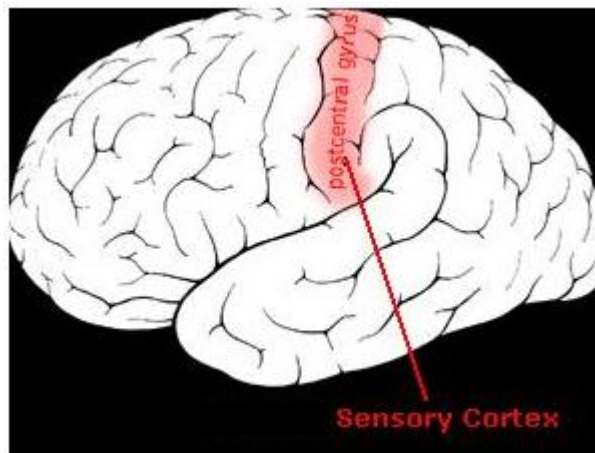
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Neurobiologist

a scientist that studies different parts of the brain to learn more about how the parts function and what they control

Sensory cortex

area of the cerebrum that lets you feel sensations from your body



Left hemisphere
of the brain

- language and speech
- math/analytical abilities

Right hemisphere
of the brain

visual and spatial processing

Corpus callosum

a bundle of nerve fibers that connects the left and right hemispheres of the brain

Allows communication between
the two hemispheres

Corpus callosum

